WHAT IS CLAIMED IS:

1. A flexible tube for an endoscope, comprising:

an elongated tubular core body; and

an outer cover which is provided over the core body, the outer cover having a portion which is formed into a laminate structure composed of at least three layers.

2. The flexible tube as claimed in Claim 1, wherein the layers of the laminate structure include an inner layer, an outer layer and at least one intermediate layer formed between the inner layer and the outer layer.

3. The flexible tube as claimed in Claim 2, wherein the core body has a plurality of holes and/or a plurality of recesses.

4. The flexible tube as claimed in Claim 3, wherein the core body includes:

a coil that is formed by winding a band-shaped material into a spiral form; and

a reticular tube that is formed by weaving a plurality of fine wires together, the reticular tube being provided over the coil.

5. The flexible tube as claimed in Claim 3, wherein the inner

layer of the outer cover has projections which are integrally formed on the inner layer so that the projections project into the holes and/or the recesses.

6. The flexible tube as claimed in Claim 4, wherein at least one of the fine wires forming the reticular tube is coated with a synthetic resin so that a coating of the synthetic resin is provided on the fine wire, in which at least a part of the coating is fused with and bonded to the inner layer of the outer cover.

7. The flexible tube as claimed in Claim 6, wherein the inner layer of the outer cover contains a material having a compatibility with the synthetic resin of the coating.

8. The flexible tube as claimed in Claim 2, wherein the portion of the laminate structure of the outer cover has a substantially uniform thickness over its entire region.

9. The flexible tube as claimed in Claim 2, wherein any one of the inner, outer and intermediate layers is different from one of the other layers in its physical property and/or chemical property.

10. The flexible tube as claimed in Claim 9, wherein any one of the inner, outer and intermediate layers is different from

one of the other layers in its hardness.

11. The flexible tube as claimed in Claim 2, wherein the outer layer of the outer cover contains a material having resistance to chemical.

12. The flexible tube as claimed in Claim 2, wherein the intermediate layer of the outer cover is formed of a material having higher elasticity than that of the outer layer.

13. The flexible tube as claimed in Claim 2, wherein the outer layer of the outer cover is formed of a material having higher hardness than that of any one of the inner and intermediate layers.

14. The flexible tube as claimed in Claim 2, wherein at least a part of the outer layer of the outer cover has higher hardness than that of any of the inner and intermediate layers.

15. The flexible tube as claimed in Claim 2, wherein the intermediate layer of the outer cover is formed so as to function as cushioning means between the inner layer and the outer layer.

16. The flexible tube as claimed in Claim 2, wherein at least one of the inner, outer and intermediate layers of the outer cover is formed of a material that contains at least one selected

from the group consisting of polyurethane-based elastomer, polyester-based elastomer, polyolefine-based elastomer, polystyrene-based elastomer, polyamide-based elastomer, fluorine-based elastomer, and fluororubber.

17. The flexible tube as claimed in Claim 2, wherein each of the inner, outer and intermediate layers of the outer cover is formed of a material that contains at least one selected from the group consisting of polyurethane-based elastomer, polyester-based elastomer, polyolefine-based elastomer, polystyrene-based elastomer, polyamide-based elastomer, fluorine-based elastomer, and fluororubber.

18. The flexible tube as claimed in Claim 1, wherein the outer cover is provided over the core body through an extrusion molding process.

19. The flexible tube as claimed in Claim 1, wherein the flexible tube has tip and base ends, and flexibility of the flexible tube increases in a gradual or stepwise manner along the direction from the base end toward the tip end.

20. The flexible tube as claimed in Claim 1, wherein any one of the layers constituting the portion of the laminate structure of the outer cover is different from one of the other layers

in its physical property and/or chemical property.

21. The flexible tube as claimed in Claim 20, wherein any one of layers constituting the laminate structure of the outer cover is different from one of the other layers in hardness.

22. The flexible tube as claimed in Claim 1, wherein at least one of the layers constituting the portion of the laminate structure has a thickness-varying region where the thickness of the layer varies in its longitudinal direction.

23. The flexible tube as claimed in Claim 22, wherein the thickness-varying region extends substantially over an entire region of the layer, and within the thickness-varying region the thickness of the layer varies in its longitudinal direction in a gradual or stepwise manner.

24. The flexible tube as claimed in Claim 22, wherein the layer with the thickness-varying region has at least one uniform thickness region which is formed so as to adjoin the thickness-varying region.

25. The flexible tube as claimed in Claim 22, wherein the layer having the thickness-varying region is formed of a material that is different from materials constituting the other layers in

its hardness.

26. The flexible tube as claimed in Claim 22, wherein each of at least two of the layers constituting the portion of the laminate structure has a thickness-varying region where the thickness of the layer varies in its longitudinal direction.

27. The flexible tube as claimed in Claim 22, wherein the outer cover is provided over the core body through an extrusion molding process.

28. The flexible tube as claimed in Claim 27, wherein in the extrusion molding process a constituent material for each of the layers is fed at a predetermined feeding rate while the core body is fed at a predetermined feeding speed, in which the thickness of the layer having the thickness-varying region is controlled by adjusting the feeding rate of the material for the layer during the extrusion molding process and/or adjusting the feeding speed of the core body during the extrusion molding process.

29. The flexible tube as claimed in Claim 1, wherein at least one of the layers constituting the portion of the laminate structure has at least two regions and at least one boundary part along its longitudinal direction, and one of the regions

is contiguous to the other region through the boundary part, in which one of the regions is different from the other regions adjacent thereto in its physical property and/or chemical property.

30. The flexible tube as claimed in Claim 29, wherein one of the regions is formed of a material which is different from that forming the other region adjacent thereto.

31. The flexible tube as claimed in Claim 29, wherein each of at least two of the layers constituting the portion of the laminate structure has at least two regions and at least one boundary part along its longitudinal direction, and one of the regions is contiguous to the other region through the boundary part, in which one of the regions is different from the other region adjacent thereto in its physical property and/or chemical property.

32. The flexible tube as claimed in Claim 31, wherein the outer cover is formed such that the boundary part of one layer is not located above or below the boundary part of the other layer in its thickness direction.

33. The flexible tube as claimed in Claim 29, wherein the boundary part is formed as a property-varying part within which

the physical property and/or the chemical property of the layer gradually vary in its longitudinal direction.

34. The flexible tube as claimed in Claim 33, wherein the boundary part is formed of a mixture of a material constituting one of the regions and a material constituting the other region.

35. The flexible tube as claimed in Claim 29, wherein the layer having the boundary part is formed such that the physical property and/or the chemical property within the boundary part vary in its longitudinal direction in a substantially stepwise manner.

36. The flexible tube as claimed in Claim 29, wherein in the layer having the at least two regions, one of the regions is different from the other region adjacent thereto in its hardness.

37. The flexible tube as claimed in Claim 29, wherein the flexible tube has tip and base ends, and flexibility of the flexible tube increases in a gradual or stepwise manner along the direction from the base end to the tip end.